Data Sheet (Cat.No.T18939)

TargetMol

Cy2-SE (iodine)

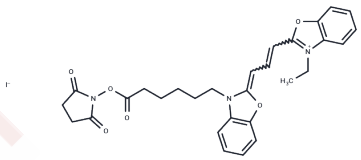
Chemical Properties

CAS No. : 186205-33-4

Formula: C29H30IN3O6

Molecular Weight: 643.47

Storage: Keep away from direct sunlight
Store at -20°C
Actual storage temperature shall be subject to the COA.



Biological Description

Description	Cy2-SE (iodine) is a Cy2 derivative with excitation/emission wavelengths of 475/510 nm. Cy2 is an amine-reactive fluorophore commonly employed for fluorescent labelling of proteins and nucleic acids.
Targets(IC50)	Others
In vitro	Reference for the usage of Cy2-SE (iodine): 1. Protein Preparation It is recommended to prepare the protein (antibody) solution at a concentration of 2 mg/mL, with a pH of 8.5 ± 0.5. If the pH is below 8.0, adjust it using 1 M sodium bicarbonate. Note: If the protein concentration is below 2 mg/mL, the labeling efficiency will significantly decrease. For optimal labeling efficiency, the recommended final protein concentration range is 2–10 mg/mL. The protein buffer must not contain primary amines (e.g., Tris or glycine) or ammonium ions, as these will affect labeling efficiency. 2. Dye Preparation Dissolve Cy2-SE (iodine) dye in anhydrous DMSO to prepare a 10 mg/mL stock solution–Aliquot and store at -20°C or -80°C, protected from light. 3. Dye Quantity Calculation The required amount of Cy2-SE (iodine) dye for the labeling reaction depends on the quantity of protein to be labeled. The optimal molar ratio of Cy2-SE (iodine) dye to protein is approximately 10. Example: If the protein to be labeled is 500 μL of 2 mg/mL IgG (MW = 150,000), dissolve 1 mg of Cy2-SE (iodine) dye in 100 μL DMSO. The required volume of Cy2-SE (iodine) is 4.31 μL, calculated as follows: 1) mmol (IgG) = mg/mL (IgG) × mL (IgG) / MW (IgG) = 2 mg/mL × 0.5 mL / 150,000 mg/mmol = 6.7×10^{-6} mmol 2) mmol (Cy2-SE (iodine)) = mmol (IgG) × 10 = 6.7×10^{-6} mmol × 10 = 6.7×10^{-5} mmol 3) μL (Cy2-SE (iodine)) = mmol (Cy2-SE (iodine)) × MW (Cy2-SE (iodine)) / mg/μL (Cy2-SE (iodine)) = 6.7×10^{-5} mmol × 643.47 mg/mmol / 0.01 mg/μL = 4.31 μL (Cy2-SE (iodine)) 4. Labeling Reaction Slowly add the corresponding volume of 10 mg/mL Cy2-SE (iodine) dye to 0.5 mL of the protein sample solution. Mix gently, then briefly centrifuge to collect the sample at the bottom of the reaction tube. Incubate the reaction tube in the dark at room temperature with gentle shaking for 60 minutes, inverting the tube several times every 10–15

In vitro	minutes. 5. Protein Purification Purify the dye-protein conjugate using an appropriate method. The above information is based on published literature. Experimental procedures should be appropriately modified to meet specific research demands.

Solubility Information

Solubility	DMSO: 100 mg/mL (155.41 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.5541 mL	7.7704 mL	15.5407 mL
5 mM	0.3108 mL	1.5541 mL	3.1081 mL
10 mM	0.1554 mL	0.777 mL	1.5541 mL
50 mM	0.0311 mL	0.1554 mL	0.3108 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Ptaszek M. Rational design of fluorophores for in vivo applications. Prog Mol Biol Transl Sci. 2013;113:59-108.
Shindy, H. A. (2017). Fundamentals in the chemistry of cyanine dyes: A review. Dyes and Pigments, 145, 505-513.

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